IN THE SPECIFICATION

The paragraph on page 12, lines 1-8 is amended as follows:

The use of the present arrangement of nanoparticle source, dry pump and collector has been found to increase particle collection efficiency by as much as 100% in comparison to the conventional source, filter pump system, even where the same nanoparticle source is present, the same filter and the same pump is used in the different order. The utilization of this arrangement of the pumping scheme may also benefit the collection of the nanoparticles. By injecting low volatility solvents into the inlet of the pump with the nanoparticle loaded gas stream, the dry pump may also be utilized as a wet scrubber with better than 90% collection efficiency. Suitable solvents are the various available ISOPAR™ solvent ~~Isopar®~~ media and PURASOLV™ solvent ~~Purasolv®~~ media.

The clean replacement paragraph is provided below:

The use of the present arrangement of nanoparticle source, dry pump and collector has been found to increase particle collection efficiency by as much as 100% in comparison to the conventional source, filter pump system, even where the same nanoparticle source is present, the same filter and the same pump is used in the different order. The utilization of this arrangement of the pumping scheme may also benefit the collection of the nanoparticles. By injecting low volatility solvents into the inlet of the pump with the nanoparticle loaded gas stream, the dry pump may also be utilized as a wet scrubber with better than 90% collection efficiency. Suitable solvents are the various available ISOPAR™ media and PURASOLV™ media.

The replacement paragraphs from page 21, line 1-line24 are corrected below: COPY

Useful nonpolar organic liquids include hexane, a mixture of isoparaffinic hydrocarbons, b.p. 156°C-176 °C (~~Isopar~~ ISOPAR G® organic liquid, Exxon, Houston, Tex.), benzene, toluene, xylenes, styrene, alkylbenzenes, and combinations thereof. In addition, liquid polymers such as polydimethylsiloxane (e.g., DC200™ liquid polymer $MW_n \doteq 200$, Dow Chemical, Midland, Mich.), polydimethyl-co-methylphenylsiloxane (e.g., DC 704 ™, liquid polymer (Dow Chemical), polyethylene glycol (e.g. CARBOWAX® ~~Carbowax®~~ 200, CARBOWAX® ~~Carbowax®~~ 400, and CARBOWAX® Carbowax® 600 polyethylene glycols, MW_n =200, 400, and 600, respectively, Union Carbide Corp., Danbury, Conn.), a polymer comprising perfluoropolyether segments (LTM ™ fluoropolymer, 3M, St. Paul, Minn.), and polycaprolactones (PLACCEL™ polycaprolactones ~~Placcel™~~ 305, 303, 308, MW_n=300-850, Daicel Chemical Ind. Co. Ltd., Tokyo, Japan) may be used.

Additionally, external heat may be applied to melt a solid (e.g., a polymer, a wax, or any low melting organic compound such as naphthalene) and generate a liquid dispersing medium suitable for use in the present invention. Examples of solids that may be used include paraffin wax, low molecular weight polyester (e.g., FA™ -300 polyester, Eastman Chemical Co., Rochester, N.Y.), and polyethylene.

The dispersing medium may be a pure liquid or a mixture of liquids and may contain additional ingredients, including inorganic and organic soluble materials and mixtures thereof. Such additives include surface-active agents, soluble polymers, insoluble particulates, acids, bases, and salts.

By surface active agent is meant an additive that has a preferred spatial orientation at an interface, e.g. large molecules having a hydrophilic head group and a hydrophobic tail (e.g. OLOA™ 1200 surfactant, Chevron Corp., Richfield, Ca., and Amoco™ 9250 surfactant, Amoco Chemical Co., Naperville, Ill.). The weight percent of surface active agent to dispersing medium can be from 0 to 20%, preferably 0 to 10%, and more preferably 0 to 5%. Other surface active agents useful in the present invention are well known to those skilled in the art.

The clean replacement paragraphs from page 21, lines 1-24 are below:

Useful nonpolar organic liquids include hexane, a mixture of isoparaffinic hydrocarbons, b.p. 156°C-176 °C (ISOPAR G® organic liquid, Exxon, Houston, Tex.), benzene, toluene, xylenes, styrene, alkylbenzenes, and combinations thereof. In addition, liquid polymers such as polydimethylsiloxane (e.g., DC200™ liquid polymer MW_n = 200, Dow Chemical, Midland, Mich.), polydimethyl-co-methylphenylsiloxane (e.g., DC 704 ™, liquid polymer (Dow Chemical), polyethylene glycol (e.g. CARBOWAX® 200, CARBOWAX® 400, and CARBOWAX® Carbowax® 600 polyethylene glycols, MW_n =200, 400, and 600, respectively, Union Carbide Corp., Danbury, Conn.), a polymer comprising perfluoropolyether segments (LTM ™ fluoropolymer, 3M, St. Paul, Minn.), and polycaprolactones (PLACCEL™ polycaprolactones 305, 303, 308, MW_n=300-850, Daicel Chemical Ind. Co. Ltd., Tokyo, Japan) may be used.

Additionally, external heat may be applied to melt a solid (e.g., a polymer, a wax, or any low melting organic compound such as naphthalene) and generate a liquid dispersing medium suitable for use in the present invention. Examples of solids that may be used include paraffin wax, low molecular weight polyester (e.g., FA™ -300 polyester, Eastman Chemical Co., Rochester, N.Y.), and polyethylene.

The dispersing medium may be a pure liquid or a mixture of liquids and may contain additional ingredients, including inorganic and organic soluble materials and mixtures thereof. Such additives include surface-active agents, soluble polymers, insoluble particulates, acids, bases, and salts.

By surface active agent is meant an additive that has a preferred spatial orientation at an interface, e.g. large molecules having a hydrophilic head group and a hydrophobic tail (e.g. OLOA™ 1200 surfactant, Chevron Corp., Richfield, Ca., and Amoco™ 9250 surfactant, Amoco Chemical Co., Naperville, Ill.). The weight percent of surface active agent to dispersing medium can be from 0 to 20%, preferably 0 to 10%, and more preferably 0 to 5%. Other surface active agents useful in the present invention are well known to those skilled in the art.

Paragraph bridging page 25, line 23- page 26, line 8 as corrected:

With the presence of nanoparticles in the gas stream, oil sealed mechanical pumps do not function in this altered processing scheme. Dry, mechanical pumps which utilize gas purged bearings are the most preferred for this application. These pumps can tolerate the presence of large amounts of particulate in the gas streams that are being pumped and convey the particulate from the inlet to the exhaust of the pump. Various models can also convey various liquids and vapors through their interiors. These pumps are in wide-spread usage in the semiconductor industry. For this application, scroll pumps did not provide sufficient performance without powder buildup in the interior of the pump. Dry lobe and screw pumps provided a sufficient amount of vacuum for the evaporation processes without powder build-up. Most preferred were dry screw pumps that could tolerate the presence of low volatility liquids (ISOPAR® organic liquid ~~Isopar®~~, DOWANOL® organic liquid ~~Dowanal®~~, PURASOLV® organic liquid ~~Purasolv®~~, kerosene, diesel fuel, etc.) in the pump mechanism. These liquids could be injected into the inlet of the vacuum pump and used to wash the nanoparticles formed. The collection efficiency of this method is > 95% of the nanoparticulate material entering the vacuum pump. These pumps typically operated at 1-10 Torr utilizing gas flows of up to 50 liters/min of an inert gas at 100°C.

Clean replacement paragraph:

With the presence of nanoparticles in the gas stream, oil sealed mechanical pumps do not function in this altered processing scheme. Dry, mechanical pumps which utilize gas purged bearings are the most preferred for this application. These pumps can tolerate the presence of large amounts of particulate in the gas streams that are being pumped and convey the particulate from the inlet to the exhaust of the pump. Various models can also convey various liquids and vapors through their interiors. These pumps are in wide-spread usage in the semiconductor industry. For this application, scroll pumps did not provide sufficient performance without powder buildup in the interior of the pump. Dry lobe and screw pumps provided a sufficient amount of vacuum for the evaporation processes without powder build-up. Most preferred were dry screw pumps that could tolerate the presence of low volatility liquids (ISOPAR® organic liquid, DOWANOL® organic liquid, PURASOLV® organic liquid, kerosene, diesel fuel, etc.) in the pump mechanism. These liquids could be injected into the inlet of the vacuum pump and used

to wash the nanoparticles formed. The collection efficiency of this method is > 95% of the nanoparticulate material entering the vacuum pump. These pumps typically operated at 1-10 Torr utilizing gas flows of up to 50 liters/min of an inert gas at 100°C.

Please cancel Figures 2A and 2B, without prejudice.

ISSUES IN THE OFFICE ACTION

1. The citation of applications in the specification have been noted as not constituting a proper information disclosure statement. Applicants note in response that they have filed two separate information disclosure statements that have been received, acknowledged and accepted by the U.S. Patent and Trademark Office. It is believed by Applicants and their counsel that the art cited in the two IDS filings constitute the most material and relevant prior art. The art cited in the specification that is not included in the IDS filings constitutes background art, duplicative art, or art of less materiality then that cited.

2. The specification has been objected to as containing trademarks on pages 12, 21 and 26. Applicants herein provide both hand corrected pages and clean pages of the specification where those marks appear. Where amendment causes pagination to change, the clean copies will extend to the end of the next paragraph crossing pages.

3. The specification was objective to because of the presence of an embedded hyperlink. That portion of the specification will be amended by hand and a clean copy of the page submitted with this Amendment.

4 & 5. The drawings are objected to as containing both references in the specification to figure elements not shown in the drawings and containing figure elements with numbers in the drawings that are not described in the specification. New figures and new descriptions or proposed corrections are required and provided in this Amendment without the introduction of new matter.